

EXECUTIVE SUMMARY

Thank you for your continued hard work sampling **Angle Pond** this year! Your monitoring group sampled the deep spot **three** times this year and has done so for many years. As you know, conducting multiple sampling events each year enables DES to more accurately detect water quality changes. Keep up the good work!

A Weed Watcher refresher training was conducted at **Angle Pond** during **2007**. Volunteers were trained to survey the pond once a month from **May** through **September**. To survey, volunteers slowly boat, or even snorkel, around the perimeter of the lake/pond and any islands it may contain. Using the materials provided in the Weed Watcher kit, volunteers look for any species that are suspicious. After a trip or two around the pond, volunteers will have a good knowledge of its plant community and will immediately notice even the most subtle changes. If a suspicious plant is found, the volunteers immediately send a specimen to DES for identification. If the plant specimen is an exotic species, a biologist will visit the site to determine the extent of the problem and to formulate a management plan to control the nuisance infestation. Remember that early detection is the key to controlling the spread of exotic plants.

OBSERVATIONS & RECOMMENDATIONS

DEEP SPOT

➤ **Chlorophyll-a**

Chlorophyll-a, a pigment found in plants, is an indicator of algal abundance. Algae are typically microscopic plants that are naturally found in lake ecosystems and contain chlorophyll-a. The measurement of the chlorophyll-a concentration in the water gives biologists an estimation of the algal concentration or lake productivity. Table 14 in Appendix A lists the current year chlorophyll-a data.

Figure 1 depicts the historical and current year chlorophyll-a concentration in the water column.

The median summer chlorophyll-a concentration for New Hampshire's lakes and ponds is 4.58 mg/m³.

The current year data (the top graph) show that the chlorophyll-a concentration **increased** from **June** to **July**, and then **decreased** from **July** to **August**.

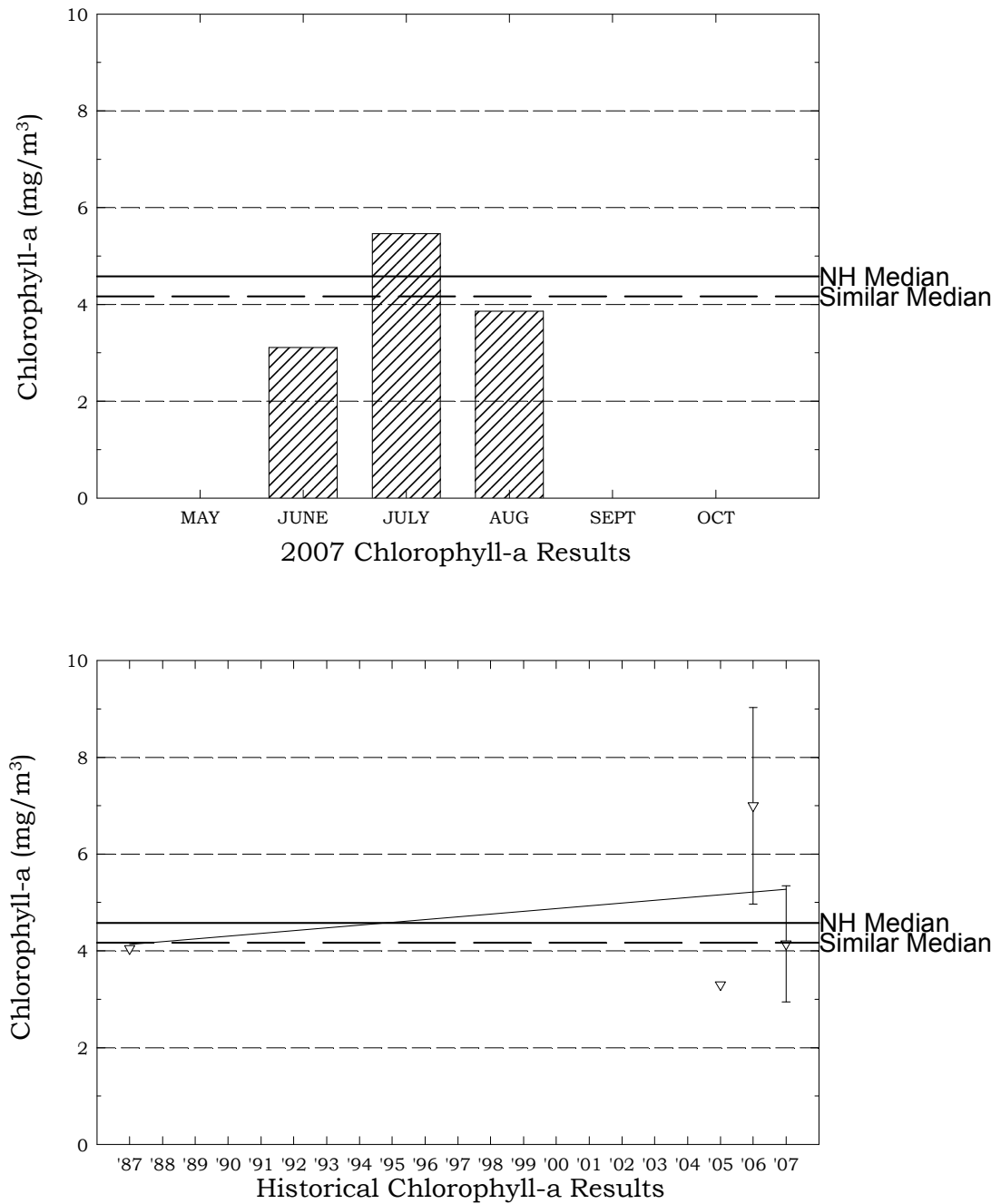
The historical data (the bottom graph) show that the **2007** chlorophyll-a mean is **slightly less than** the state median and is **approximately equal to** the similar lake median. For more information on the similar lake median, refer to Appendix D.

Overall, visual inspection of the historical data trend line (the bottom graph) shows an **increasing** meaning **worsening** in-lake chlorophyll-a trend since monitoring began in **1987**. Please keep in mind that this trend is based on **limited** data and a significant gap in time. After 10 consecutive years of sample collection, we will be able to conduct a statistical analysis of the historical data to objectively determine if there has been a significant change in the annual mean transparency since monitoring began.

While algae are naturally present in all waterbodies, an excessive or increasing amount of any type is not welcomed. Phosphorus is the nutrient that algae typically depend upon for growth in New Hampshire lakes and ponds. Algal concentrations increase as nonpoint sources of phosphorus from the watershed increase, or as in-lake phosphorus sources increase. Increased Chlorophyll-a concentrations can also affect water clarity, causing Secchi-disk transparency to decrease (worsen) and turbidity to increase (worsen). Therefore, it is extremely important for volunteer monitors to continually educate all watershed residents about management practices that can be implemented to minimize phosphorus loading to surface waters.

Angle Pond, Sandown

Figure 1. Monthly and Historical Chlorophyll-a Results



➤ **Phytoplankton and Cyanobacteria**

Table 1 lists the phytoplankton (algae) and/or cyanobacteria species observed in the pond in **2007**. Specifically, this table lists the three most dominant phytoplankton species observed and their relative dominance in the sample.

Table 1. Dominant Phytoplankton/Cyanobacteria (July 2007)

Genus	Species	% Dominance
Chrysophyte (Golden-Brown)	Dinobryon	93.0
Chrysophyte (Golden-Brown)	Synura	3.0
Bacillariophyta (Diatom)	Asterionella	3.0

Phytoplankton populations undergo a natural succession during the growing season. Please refer to the “Biological Monitoring Parameters” section of this report for a more detailed explanation regarding seasonal plankton succession. Diatoms and golden-brown algae populations are typical in New Hampshire’s less productive lakes and ponds.

➤ **Secchi Disk Transparency**

Volunteer monitors use the Secchi disk, a 20 cm disk with alternating black and white quadrants, to measure how far a person can see into the water. Transparency, a measure of water clarity, can be affected by the amount of algae and sediment in the water, as well as the natural color of the water. Table 14 in Appendix A lists the current year transparency data. **The median summer transparency for New Hampshire’s lakes and ponds is 3.2 meters.**

Figure 2 depicts the historical and current year transparency *with and without* the use of a viewscope.

The current year data (the top graph) includes both the non-viewscope and viewscope readings for **2007**.

The current year *non-viewscope* in-lake transparency **remained relatively stable** from **June** to **July**, and then **increased** from **July** to **August**.

It is important to note that as the chlorophyll concentration fluctuates at the deep spot, the transparency often responds inversely. We typically expect this **inverse** relationship in lakes. As the amount of algal cells in the water **increases**, the depth to which one can see into the water column typically **decreases** and vice versa.

The current year *viewscope* in-lake transparency **decreased** from **June** to **July** and then **increased** from **July** to **August**.

The viewscope in-lake transparency was **greater than** the non-viewscope transparency on each sampling event. As discussed previously, a comparison of transparency readings taken with and without the use of a viewscope shows that the viewscope typically increases the depth to which the Secchi disk can be seen into the lake, particularly on sunny and windy days.

It is important to note that viewscope transparency data are not compared to a New Hampshire median or similar lake median. This is because lake transparency data with the use of the viewscope has not been historically measured by DES. In the future, the New Hampshire and similar lake medians for viewscope transparency will be calculated and added to the appropriate graphs.

The historical data (the bottom graph) show that the **2007** mean non-viewscope transparency is **slightly greater than** the state median and is **less than** the similar lake median. Please refer to Appendix D for more information about the similar lake median.

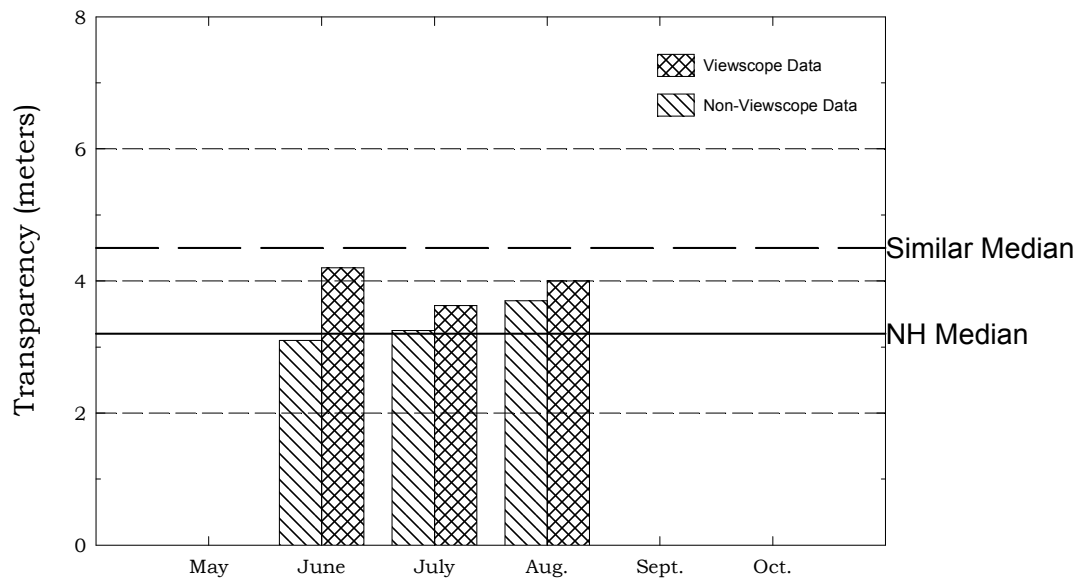
Visual inspection of the historical data trend line (the bottom graph) shows a **decreasing** trend, meaning that the transparency has **worsened** since monitoring began in **1987**. Again, please keep in mind that this trend is based on only **four** years of data. After 10 consecutive years of sample collection, we will be able to conduct a statistical analysis of the historical data to objectively determine if there has been a significant change in the annual mean transparency since monitoring began.

We encourage your monitoring group to continue collecting transparency measurements with the viewscope. Ultimately, we would like all monitoring groups to use a viewscope to collect Secchi disk readings. At some point in the future, when we have sufficient data to determine a statistical relationship between transparency readings collected with and without the viewscope, it may only be necessary to collect transparency readings with the viewscope.

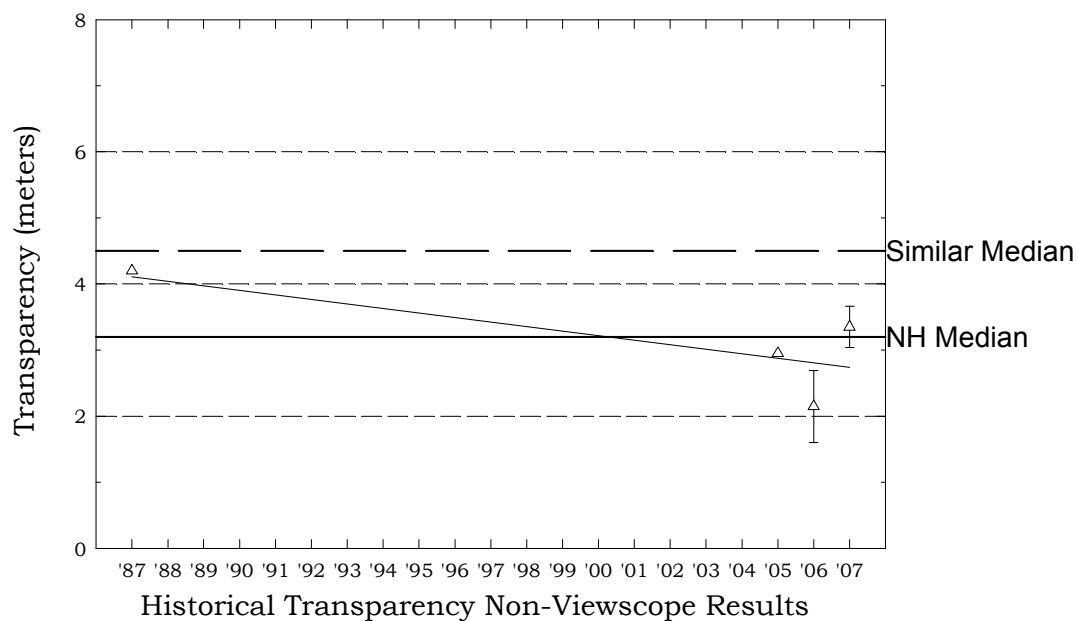
Typically, high intensity rainfall causes sediment-laden stormwater runoff to flow into surface waters, thus increasing turbidity and decreasing clarity. Efforts should continually be made to stabilize stream banks, pond shorelines, disturbed soils within the watershed, and especially dirt roads located immediately adjacent to the edge of tributaries and the pond. Guides to best management practices that can be implemented to reduce, and possibly even eliminate, nonpoint source pollutants, are available from DES upon request.

Angle Pond, Sandown

Figure 2. Monthly and Historical Transparency Results



2007 Transparency Viewscape and Non-Viewscape Results



➤ **Total Phosphorus**

Phosphorus is typically the limiting nutrient for vascular plant and algae growth in New Hampshire's lakes and ponds. Excessive phosphorus in a pond can lead to increased plant and algal growth over time. Table 14 in Appendix A lists the current year in-lake total phosphorus data. **The median summer total phosphorus concentration in the epilimnion (upper layer) of New Hampshire's lakes and ponds is 12 ug/L. The median summer phosphorus concentration in the hypolimnion (lower layer) is 14 ug/L.**

Figure 3 depicts the historical amount of epilimnetic (upper layer) and hypolimnetic (lower layer) total phosphorus concentrations; the inset graphs depict current year total phosphorus data.

The current year epilimnion (the top inset graph) data show that the phosphorus concentration **decreased** from **June** to **July**, and then **increased** from **July** to **August**.

The **elevated** epilimnetic phosphorus concentration measured on the **June** sampling event may be a result of phosphorus-enriched stormwater runoff that flowed into the surface layer of the pond. Weather records show that approximately **0.5 inches** of rainfall was measured **24-72 hours** prior to sampling.

The historical data show that the **2007** mean epilimnetic phosphorus concentration is **greater than** the state median and is **much greater than** the similar lake median. Refer to Appendix D for more information about the similar lake median.

The current year data for the hypolimnion (the bottom inset graph) show that the phosphorus concentration **increased** from **June** to **August**.

The hypolimnetic (lower layer) turbidity was **elevated** on the **August** sampling event (**5.28 NTUs**). This suggests that the pond bottom may have been disturbed by the anchor or by the Kemmerer Bottle while sampling and/or that the pond bottom is covered by an easily disturbed, thick organic layer of sediment. When the pond bottom is disturbed, phosphorus rich sediment is released into the water column. When collecting the hypolimnion sample, make sure that there is no sediment in the Kemmerer Bottle before filling the sample bottles.

The historical data show that the **2007** mean hypolimnetic phosphorus concentration is **greater than** the state and similar lake medians. Please refer to Appendix D for more information about the similar lake median.

2007

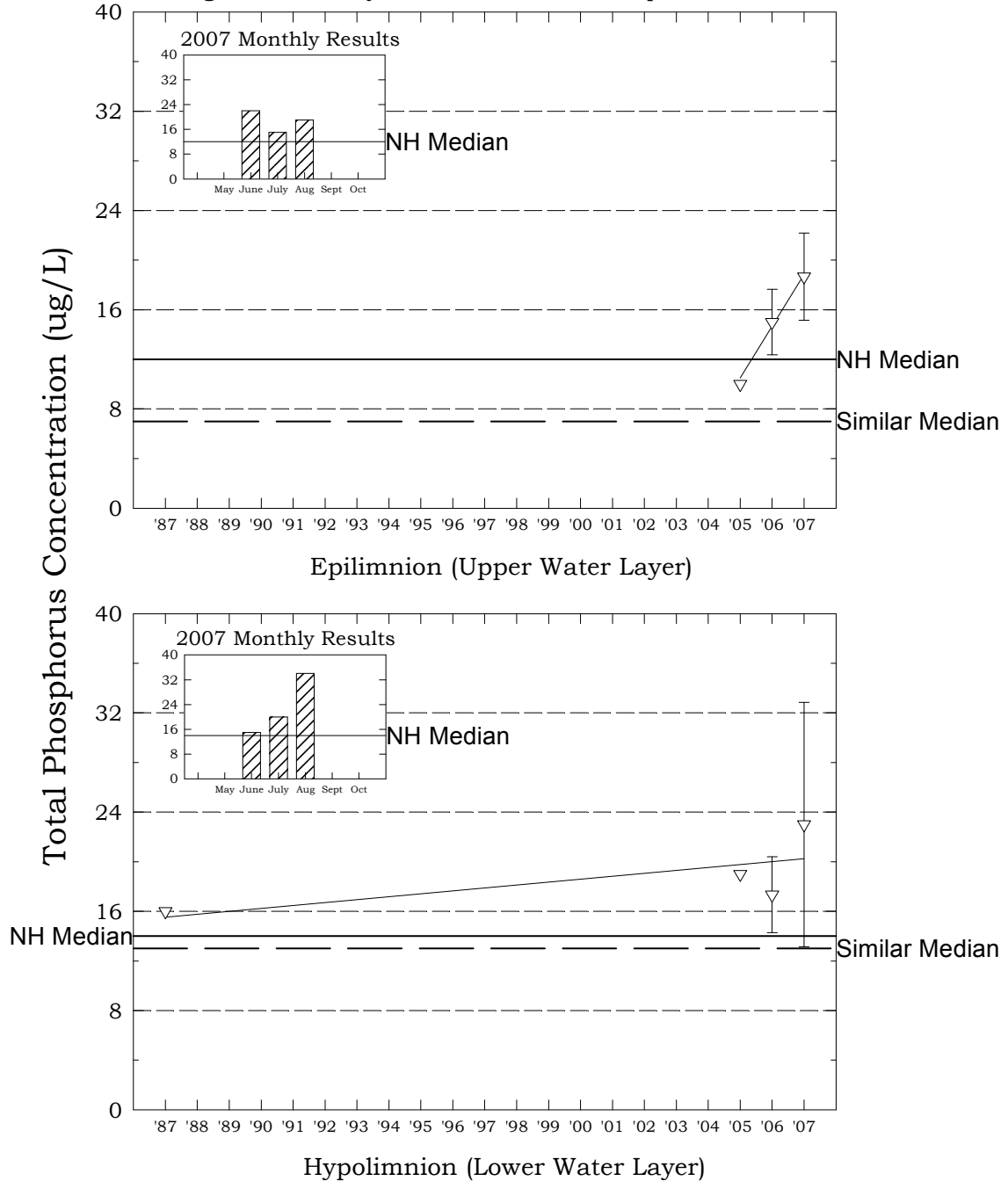
Overall, visual inspection of the historical data trend line for the epilimnion and hypolimnion shows an **increasing** phosphorus trend since monitoring began. Specifically the mean annual epilimnetic and hypolimnetic phosphorus concentration has **worsened** since monitoring began in **1987**. Please note that the epilimnetic phosphorus concentration has only been measured since 2005.

As discussed previously, after 10 consecutive years of sample collection, we will be able to conduct a statistical analysis of the historical data to objectively determine if there has been a significant change in the annual mean phosphorus concentration since monitoring began.

One of the most important approaches to reducing phosphorus loading to a waterbody is to continually educate watershed residents about the watershed sources of phosphorus and how excessive phosphorus loading can negatively affect the ecology and the recreational, economical, and ecological value of lakes and ponds.

Angle Pond, Sandown

Figure 3. Monthly and Historical Total Phosphorus Data.



➤ pH

Table 14 in Appendix A presents the current year in-lake pH data.

pH is measured on a logarithmic scale of 0 (acidic) to 14 (basic). pH is important to the survival and reproduction of fish and other aquatic life. A pH below 6.0 typically limits the growth and reproduction of fish. A pH between 6.0 and 7.0 is ideal for fish. The median pH value for the epilimnion (upper layer) in New Hampshire's lakes and ponds is **6.6**, which indicates that the surface waters are slightly acidic. For a more detailed explanation regarding pH, please refer to the "Chemical Monitoring Parameters" section of this report.

The pH at the deep spot this year ranged from **6.84 to 7.06** in the epilimnion and from **6.22 to 6.37** in the hypolimnion, which means that the water is ***slightly acidic***.

It is important to point out that the hypolimnetic (lower layer) pH was ***lower (more acidic)*** than in the epilimnion (upper layer). This increase in acidity near the pond bottom is likely due to the decomposition of organic matter and the release of acidic by-products into the water column.

Due to the state's abundance of granite bedrock and acid deposition received from snowmelt, rainfall, and atmospheric particulates, there is little that can be feasibly done to effectively increase pond pH. The pH at the deep spot, however, is sufficient to support aquatic life.

➤ Acid Neutralizing Capacity (ANC)

Table 14 in Appendix A presents the current year epilimnetic ANC for the deep spot.

Buffering capacity (ANC) describes the ability of a solution to resist changes in pH by neutralizing the acidic input. The median ANC value for New Hampshire's lakes and ponds is **4.9 mg/L**, which indicates that many lakes and ponds in the state are at least "moderately vulnerable" to acidic inputs. For a more detailed explanation about ANC, please refer to the "Chemical Monitoring Parameters" section of this report.

The acid neutralizing capacity (ANC) of the epilimnion (upper layer) ranged from **13.7 mg/L to 14.5 mg/L**. This indicates that the pond has a ***low vulnerability*** to acidic inputs. Due to a laboratory error the ANC value was not calculated for the **August** sampling event. Please note that the August result of "0" in Table 14 is a place holder.

➤ Conductivity

Table 14 in Appendix A presents the current year in-lake conductivity data.

Conductivity is the numerical expression of the ability of water to carry an electric current, which is determined by the number of negatively charged ions from metals, salts, and minerals in the water column. The median conductivity value for New Hampshire's lakes and ponds is **40.0 uMhos/cm**. For a more detailed explanation, please refer to the "Chemical Monitoring Parameters" section of this report.

The **2007** conductivity results for the deep spot were ***slightly lower than*** has been measured **during the past two years**. It is likely that the lack of rainfall during the **2007** season reduced watershed runoff to the pond. Typically, rain events and snowmelt cause potentially pollutant laden watershed runoff to reach tributaries and ultimately the pond leading to elevated conductivity levels.

Although conductivity levels are lower than in the previous two years, the in-lake conductivity is ***much greater than*** the state median. Typically, increasing conductivity indicates the influence of pollutant sources associated with human activities. These sources include failed or marginally functioning septic systems, agricultural runoff, stormwater runoff, and road runoff which contains road salt during the spring snow-melt. New development in the watershed can alter runoff patterns and expose new soil and bedrock areas, which could also contribute to increasing conductivity. In addition, natural sources, such as iron and manganese deposits in bedrock, can influence conductivity.

We recommend that your monitoring group conduct a shoreline conductivity survey of the pond and tributaries with ***elevated*** conductivity to help identify the sources.

To learn how to conduct a shoreline or tributary conductivity survey, please refer to the 2004 special topic article, which is posted on the VLAP website at http://www.des.nh.gov/wmb/vlap/2004/documents/Appendix_D.pdf or contact the VLAP Coordinator.

It is possible that de-icing materials applied to nearby roadways during the winter months may be influencing the conductivity in the pond. In New Hampshire, the most commonly used de-icing material is salt (sodium chloride). Therefore, we recommend that the **epilimnion** (upper layer) be sampled for chloride next year. This additional sampling may help us identify what areas of the watershed are contributing to the increasing in-lake conductivity.

Please note that the DES Limnology Center in Concord will be able to conduct chloride analyses, free of charge, beginning in 2008. As a reminder, it is best to conduct chloride sampling in the spring as the snow is melting and during rain events.

➤ Dissolved Oxygen and Temperature

Table 9 in Appendix A depicts the dissolved oxygen/temperature profile(s) collected during **2007**.

The presence of sufficient amounts of dissolved oxygen in the water column is vital to fish and amphibians and to bottom-dwelling organisms. Please refer to the “Chemical Monitoring Parameters” section of this report for a more detailed explanation.

The dissolved oxygen concentration was ***lower in the hypolimnion (lower layer) than in the epilimnion (upper layer)*** at the deep spot on the **July** sampling event. As stratified lakes/ponds age, and as the summer progresses, oxygen typically becomes ***depleted*** in the hypolimnion by the process of decomposition. Specifically, the reduction of hypolimnetic oxygen is primarily a result of biological organisms using oxygen to break down organic matter, both in the water column and particularly at the bottom of the lake/pond where the water meets the sediment. When the hypolimnetic oxygen concentration is depleted to less than 1 mg/L, the phosphorus that is normally bound up in the sediment may be re-released into the water column, a process referred to as ***internal phosphorus loading***.

Lower hypolimnetic oxygen levels are a sign of the pond’s ***aging*** and ***declining*** health. This year the DES biologist collected the dissolved oxygen profile in **July**. We recommend that the annual biologist visit for the **2008** sampling year be scheduled during **June** so that we can determine if oxygen depletion is occurring in the hypolimnion ***earlier*** in the sampling year.

During this year, and past sampling years, the pond has experienced lower dissolved oxygen concentration and higher total phosphorus concentration in the hypolimnion (lower layer) than in the epilimnion (upper layer). These data suggest that the process of ***internal phosphorus loading*** is occurring in the pond. When the hypolimnetic dissolved oxygen concentration is depleted to less than 1 mg/L, **as it was on previous annual visits**, the phosphorus that is normally bound up with metals in the sediment may be re-released into the water column. Since an internal source of phosphorus in the pond may be present, it is even more important that watershed residents act proactively to minimize phosphorus loading from the watershed.

➤ Turbidity

Table 14 in Appendix A presents the current year in-lake turbidity data.

Turbidity is caused by suspended matter, such as clay, silt, and algae. Water clarity is strongly influenced by turbidity. Please refer to the “Other Monitoring Parameters” section of this report for a more detailed explanation.

The turbidity of the metalimnion (middle layer) sample was ***elevated* (2.56 NTUs)** on the **August** sampling event. This suggests that a layer of algae may have been present at this location. Algae are often found in the metalimnion of lakes/ponds due to the differences in density between the epilimnion and the hypolimnion and the resulting abundance of food contained in that layer.

As discussed previously, the hypolimnetic (lower layer) turbidity was ***elevated* (5.28 NTUs)** on the **August** sampling event. In addition, the hypolimnetic turbidity has been elevated on many sampling events during previous sampling years. This suggests that the pond bottom may have been disturbed by the anchor or by the Kemmerer Bottle while sampling and/or that the pond bottom is covered by an easily disturbed, thick organic layer of sediment. When the pond bottom is disturbed, phosphorus rich sediment is released into the water column. When collecting the hypolimnion sample, make sure that there is no sediment in the Kemmerer Bottle before filling the sample bottles.

TRIBUTARY SAMPLING

➤ **Total Phosphorus**

Table 14 in Appendix A presents the current year total phosphorus data for tributary stations. Please refer to the “Chemical Monitoring Parameters” section of the report for a detailed explanation of total phosphorus.

The phosphorus concentration in the **North Inlet** sample on the **June and July** sampling event was **elevated (44 ug/L and 140 ug/L)**. The turbidity was also **slightly elevated (1.34 NTUs and 2.33 NTUs)**. Weather records show that approximately **0.5 inches** of rainfall was measured **24-72 hours** prior to the **June** sampling event, and was raining heavily prior to and during the **July** sampling event. It is possible that wetland systems in the watershed were releasing phosphorus-enriched water into the tributaries and ultimately into the lake. Also, rain events typically carry phosphorus laden watershed runoff to tributaries. Phosphorus sources in the watershed can include agricultural runoff, failing or marginal septic systems, stormwater runoff, road runoff, and watershed development.

The phosphorus concentration in the **Sayre Inlet** sample on the **June and July** sampling events was **elevated (150 ug/L and 560 ug/L)**, and the turbidity was also **elevated (8.0 NTUs and 46.3 NTUs)**. Elevated turbidity levels are most often a result of sediment and/or organic material present in the sample. These materials typically contain phosphorus and when present in elevated amounts can contribute to elevated tributary phosphorus levels. As previously mentioned, rain events carry phosphorus laden watershed runoff to tributaries and the ultimately the pond.

➤ **pH**

Table 14 in Appendix A presents the current year pH data for the tributary stations. Please refer to the “Chemical Monitoring Parameters” section of this report for a more detailed explanation of pH.

The pH of **Sayre** and **West Inlets** ranged from **6.27 to 6.6 (> 6)** and is sufficient to support aquatic life.

The pH of the **North Inlet** appears to be slightly acidic. This can be caused by the presence of humic and fulvic acids. Humic and fulvic acids naturally occur as a result of decomposing organic matter such as leaves. These acids cause the water to be tea colored. In New Hampshire the presence of granite bedrock and acid deposition also naturally lowers the pH of freshwaters.

➤ Conductivity

Table 14 in Appendix A presents the current year conductivity data for the tributary stations. Please refer to the “Chemical Monitoring Parameters” section of the report for a more detailed explanation of conductivity.

Overall, the conductivity has **remained constant** in the tributaries since monitoring began.

All tributaries have experienced elevated conductivity levels since monitoring began. We recommend that your monitoring group conduct stream surveys and rain event sampling along tributaries with **elevated** conductivity levels so we can determine potential sources to the lake. As previously mentioned, increasing conductivity typically indicates the influence of pollutant sources associated with human activities.

For a detailed explanation on how to conduct rain event sampling and stream surveys, please refer to the 2002 VLAP Annual Report special topic article, which is posted on the VLAP website at http://www.des.nh.gov/wmb/vlap/2002/documents/Appndxd_monitoring.pdf, or contact the VLAP Coordinator.

➤ Turbidity

Table 14 in Appendix A presents the current year turbidity data for the tributary stations. Please refer to the “Other Monitoring Parameters” section of the report for a more detailed explanation of turbidity.

Overall, tributary turbidity levels **increased** during the **2007** sampling season.

North Inlet and **Sayre Inlet** experienced turbid conditions in **June** and **July** likely the result of significant rain events prior to sampling. Rainfall washes sediment and organic materials into tributaries causing turbid conditions before the debris settle out of the system.

➤ Bacteria (*E. coli*)

Table 14 in Appendix A lists the current year data for bacteria (*E.coli*) testing. *E. coli* is a normal bacterium found in the large intestine of humans and other warm-blooded animals. *E.coli* is used as an indicator organism because it is easily cultured and its presence in the water, in defined amounts, indicates that sewage **may** be present. If sewage is present in the water, potentially harmful disease-causing organisms **may** also be present. Please refer to the “Other Monitoring Parameters” section of the report for a more detailed explanation.

The **West Shore Drainage Pipe** *E. coli* concentration was **elevated (320 cts/100 mL)** on the **July** sampling event. This was **greater than** the state

standard of 88 counts per 100 mL for designated public beaches, but **less than** the state standard of 406 counts per 100 mL for recreational waters that are not designated public beaches. Further investigation into the bacteria source(s) may be warranted. It is recommended that your monitoring group conduct rain event sampling and identify potential sources in the area. This additional sampling may help determine the bacteria source(s).

The **Sayre Inlet** *E. coli* concentration was **elevated** on the **July** sampling event. The concentration of **890** counts per 100 mL **was greater than** the state standard of 406 counts per 100 mL for recreational waters that are not designated public beaches. Heavy rainfall occurred prior to sample collection potentially causing bacteria laden watershed runoff to enter the inlet.

We recommend that your monitoring group conduct rain event sampling and bracket sampling in this area next year to help determine the bacteria source(s). Sayre Inlet is also scheduled for a site walk by DES biologists to assist in identifying potential bacteria sources.

For a detailed explanation on how to conduct rain event sampling and stream surveys, please refer to the 2002 VLAP Annual Report special topic article, which is posted on the VLAP website at http://www.des.nh.gov/wmb/vlap/2002/documents/Appndxd_monitoring.pdf, or contact the VLAP Coordinator.

DATA QUALITY ASSURANCE AND CONTROL

Annual Assessment Audit

Annual Assessment Audit:

During the annual visit to your pond, the biologist conducted a sampling procedures assessment audit for your monitoring group. Specifically, the biologist observed the performance of your monitoring group while sampling and completed an assessment audit sheet to document the volunteer monitors' ability to follow the proper field sampling procedures, as outlined in the VLAP Monitor's Field Manual. This assessment is used to identify any aspects of sample collection in which volunteer monitors failed to follow proper procedures, and also provides an opportunity for the biologist to retrain the volunteer monitors as necessary. This will ultimately ensure that the samples the volunteer monitors collect are truly representative of actual lake and tributary conditions.

Overall, your monitoring group did an **excellent** job collecting samples on the annual biologist visit this year! Specifically, the members of your monitoring group followed the proper field sampling procedures and there was no need for the biologist to provide additional training. Keep up the good work!

Sample Receipt Checklist

Each time your monitoring group dropped off samples at the laboratory this summer, the laboratory staff completed a sample receipt checklist to assess and document if your group followed proper sampling techniques when collecting the samples. The purpose of the sample receipt checklist is to minimize, and hopefully eliminate, improper sampling techniques.

Overall, the sample receipt checklist showed that your monitoring group did an **excellent** job when collecting samples and submitting them to the laboratory this year! Specifically, the members of your monitoring group followed the proper field sampling procedures and there was no need for the laboratory staff to contact your group with questions, and no samples were rejected for analysis.

USEFUL RESOURCES

Acid Deposition Impacting New Hampshire's Ecosystems, DES fact sheet ARD-32, (603) 271-2975 or www.des.nh.gov/factsheets/ard/ard-32.htm.

Best Management Practices to Control Nonpoint Source Pollution: A Guide for Citizens and Town Officials, DES Booklet WD-03-42, (603) 271-2975.

Canada Geese Facts and Management Options, DES fact sheet BB-53, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-53.htm.

Cyanobacteria in New Hampshire Waters Potential Dangers of Blue-Green Algae Blooms, DES fact sheet WMB-10, (603) 271-2975 or www.des.nh.gov/factsheets/wmb/wmb-10.htm.

Erosion Control for Construction in the Protected Shoreland Buffer Zone, DES fact sheet WD-SP-1, (603) 271-2975 or www.des.nh.gov/factsheets/sp/sp-1.htm.

Freshwater Jellyfish In New Hampshire, DES fact sheet WD-BB-5, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-51/htm.

Impacts of Development Upon Stormwater Runoff, DES fact sheet WD-WQE-7, (603) 271-2975 or www.des.nh.gov/factsheets/wqe/wqe-7.htm.

IPM: An Alternative to Pesticides, DES fact sheet WD-SP-3, (603) 271-2975 or www.des.nh.gov/factsheets/sp/sp-3.htm.

Iron Bacteria in Surface Water, DES fact sheet WD-BB-18, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-18.htm.

Lake Foam, DES fact sheet WD-BB-4, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-5.htm.

Lake Protection Tips: Some Do's and Don'ts for Maintaining Healthy Lakes, DES fact sheet WD-BB-9, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-9.htm.

Low Impact Development Hydrologic Analysis. Manual prepared by Prince George's County, Maryland, Department of Environmental Resources. July 1999. To access this document, visit www.epa.gov/owow/nps/lid_hydr.pdf or call the EPA Water Resource Center at (202) 566-1736.

Low Impact Development: Taking Steps to Protect New Hampshire's Surface Waters, DES fact sheet WD-WMB-16, (603) 271-2975 or www.des.nh.gov/factsheets/wmb/wmb-17.htm.

Proper Lawn Care In the Protected Shoreland, The Comprehensive Shoreland Protection Act, DES fact sheet WD-SP-2, (603) 271-2975 or www.des.nh.gov/factsheets/sp/sp-2.htm.

Road Salt and Water Quality, DES fact sheet WD-WMB-4, (603) 271-2975 or www.des.nh.gov/factsheets/wmb/wmb-4.htm.

Sand Dumping - Beach Construction, DES fact sheet WD-BB-15, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-15.htm.

Shorelands Under the Jurisdiction of the Comprehensive Shoreland Protection Act, DES fact sheet SP-4, (603) 271-2975 or www.des.nh.gov/factsheets/sp/sp-4.htm.

Soil Erosion and Sediment Control on Construction Sites, DES fact sheet WQE-6, (603) 271-2975 or www.des.nh.gov/factsheets/wqe/wqe-6.htm.

Through the Looking Glass: A Field Guide to Aquatic Plants, North American Lake Management Society, 1988, (608) 233-2836 or www.nalms.org.

Weed Watchers: An Association to Halt the Spread of Exotic Aquatic Plants, DES fact sheet WD-BB-4, (603) 271-2975 or www.des.nh.gov/factsheets/bb/bb-4.htm.

Watershed Districts and Ordinances, DES fact sheet WD-WMB-16, (603) 271-2975 or www.des.nh.gov/factsheets/wmb/wmb-16.htm.